

REMARKS/ARGUMENTS

Claims 1-10 remain pending in the instant application. Favorable reconsideration is kindly requested.

Rejection Under 35 U.S.C. §102

Claims 1-4 are rejected under 35 U.S.C. §102 as anticipated by U.S. Patent No. 6,032,699 to Cochran, *et al.* ("Cochran"). Applicant respectfully traverses the rejection, for at least the following reasons.

Initially, the claims as amended above recite a method and apparatus concerning a subsea flexible tubular pipe. This amendment is fully supported by the original specification as filed, and no new matter has been added. Such subsea flexible tubular pipes are laid in the sea water, sometimes at great depth. They are exposed to external hydrostatic pressure far exceeding those contemplated by Cochran.

As recited in the present claims, permeate gases contained in the hydrocarbons being transported by a subsea flexible tubular pipe are liable to defuse through the wall of an internal pressure sheath. Such permeate gases often comprise water vapor, carbon dioxide, methane or hydrogen sulfide. Such permeate gases are likely to corrode the reinforcing elements of the subsea pipe. In particular, water vapor present in the permeate gases may condense, forming a liquid mixture which obstructs the flow path of permeate gases, and exacerbates the resulting corrosion.

Another risk inherent in the build up of such permeate gases is the risk of rupturing an outer coating due to the build up of pressure in an annular region surrounding the internal pressure sheath. This risk is elevated near the surface, where the external hydrostatic pressure is reduced.

In contrast to the method and structure of Applicant's pending claims, Cochran concerns a fluid delivery pipe with leak detection. It includes a double walled pipe assembly forming a containment chamber that is pressurized with an inert gas. However, Cochran includes no teaching or suggestion that the pipe material disclosed is flexible, nor suitable for exposure to subsea water at elevated hydrostatic pressure. To the contrary, the fluid delivery pipe of Cochran is used at atmospheric pressure in ambient air.

Secondly, the Office Action cites the structure 36a of Cochran as comprising the vent for venting permeate gases as recited in independent claim 1. Applicant respectfully disagrees. Considering Cochran's disclosure as a whole, the entire external pressure vessel comprises a blind chamber, with pressure monitored by sensor 88. Therefore, Cochran refers to structures 36a, 36b and 36c as ports, not as vents. This is apparent upon reading of an entire reference, since Cochran does not teach or suggest a flow of entrainment gas through the annular region under pressure. Nor does Cochran contemplate venting the inert gas 70. Therefore, Cochran does not teach or suggest a step of operating the vent, as recited in claim 1.

In addition to being directed at a distinguished technical problem as concerns Applicant's present application, Cochran does not teach or suggest the specific elements or steps recited in at least independent claim 1. Therefore, Applicant respectfully submits that independent claim 1 is patentably distinguished over Cochran. The Federal Circuit has recently reiterated the strict identity standard of anticipation, stating "Because the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements arranged as in the claim." *Net MoneyIN, Inc., v. Verisign, Inc.*, 545 F.3d 1359, 88 U.S.P.Q.2d 1751 (Fed. Cir., 2008).

Claims 2-4 each depend from independent claim 1, and incorporate its features by reference. Claims 2-4 are each separately patentable, but in the interest of brevity are offered as patentable for at least the same reasons as their underlying independent base claim. Applicant respectfully submits that the rejection has been obviated, and kindly requests favorable reconsideration and withdrawal.

Rejection Under 35 U.S.C. §103

Claim 5 is rejected under 35 U.S.C. §103(a) as obvious over Cochran in view of U.S. Patent No. 6,643,388 to Taylor, *et al.* ("Taylor"). Applicant respectfully traverses the rejection for at least the following reasons.

The Office Action cites to Taylor for its alleged use of polymeric liners for example polyethylene housed in a rigid pipe. Taylor refers to U.S. Patent No. 5,072,622, concerning pipe lines constructed of steel, iron or concrete, and not subsea flexible tubular pipes. Moreover, according to Taylor, there are no reinforcing plies in an annulus between the pipe and the liner.

Accordingly, the problem to be solved by Taylor is distinguished from both that of Cochran, and also of Applicants presently claimed method. Therefore, Applicant respectfully submits that there is no apparent reason to combine Taylor with Cochran as proposed in the Office Action.

Moreover, even presuming that Taylor teaches all that is attributed to it, and further presuming that there were some apparent reason for one of ordinary skill in the art to combine the references as proposed in the Office Action, the combination would not ameliorate the deficiencies of Cochran with respect to the underlying independent base claim 1, upon which claim 5 depends.

It remains well settled that to establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (CCPA 1974). Applicant respectfully submits that claim 5 is patentably distinguished over Cochran and/or Taylor singly or in combination, and that the rejection has been obviated. Favorable reconsideration and withdrawal is kindly requested.

Claims 6-8 are rejected under 35 U.S.C. §103(a) as obvious over Cochran in view of U.S. Patent No. 4,315,408 to Karl ("Karl"). Applicant respectfully traverses the rejection, for at least the following reasons. The Office Action proposed that one of ordinary skill in the art would find it obvious to modify the structure of Cochran by substituting tubes to create an annulus to transmit gases. Applicant respectfully disagrees.

The proposed modification in view of Karl would destroy the underlying function of Cochran which is to use a sealed pressure vessel of the outer annular chamber of a double-walled pipe to detect leaks from the inner pipe. Such a combination is non-obvious, according to controlling precedent. "If when combined, the references would produce a seemingly inoperative device, then they teach away from their combination." *Tec Air Inc., v. Denso Manufacturing Michigan Inc.*, 192 F.3d 1353 (Fed. Cir. 1999).

Moreover, even if combined, the tubes disclosed according to Karl would not function as an entrainment to force permeate gases through the annular region for example in the interstitial regions between such tubes as illustrated in Karl, Figure 6. Therefore, substituting the tubes of Karl as proposed in the Office Action does not meet all features of at least independent claim 6. Moreover, with reference to the above discussion of Cochran concerning independent claim 1,

Cochran does not teach or suggest a vent toward which permeate gases flow. The Office Action does not allege that deficiency is cured by the proposed combination with Karl.

Therefore, Applicant respectfully submits that claim 6 is patentably distinguished over Cochran and/or Karl taken singly or in any combination. Dependent claims 7 and 8 each depend from independent claim 6, and incorporate its features by reference. Claims 7 and 8 are each separately patentable, but are offered as patentable for at least the same reasons as their underlying independent base claim.

Applicant respectfully submits that the rejection has been obviated, and kindly requests favorable reconsideration and withdrawal.

Claims 9 and 10 are rejected under 35 U.S.C. §103(a) as obvious over Cochran in view of Karl as applied to claims 6-8, and further in view of Taylor. Applicant respectfully traverses the rejection, for at least the following reasons.

Claims 9 and 10 each depend from independent claim 6, and incorporate its features by reference. Claims 9-10 are submitted as patentable over the proposed combination of Cochran, Karl and Taylor for at least the same reasons noted above, namely that Cochran in view of Karl or Taylor separately, does not teach or suggest all features of the present claims.

Therefore, Applicant respectfully submits that dependent claims 9 and 10 are likewise patentably distinguished over Cochran, Karl and/or Taylor, either singly or in any combination. Favorable reconsideration and withdrawal is kindly requested.

Conclusion

In light of the foregoing, Applicant respectfully submits that all claims are patentable, and kindly requests an early and favorable Notice of Allowability.

THIS CORRESPONDENCE IS BEING
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DJT:lf

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David J. Torrente", written over a horizontal line.

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